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Abstract of the Disclosure

A fast response liquid crystal optical retarder system. A liquid crystal retarder system employs one or more liquid crystal cells and corresponding drive circuits. The drive circuits provide to the cell 5 a rectangular wave ac voltage signal whose RMS voltage is controlled. To switch from one retardance to another, the voltage is increased or decreased beyond the voltage corresponding to the target retardance and then, prior to or when the target retardance is reached, the applied voltage is switched to the voltage corresponding to the target 10 retardance. One or more pairs of liquid crystal cells provided sequentially along the path of light propagation and with their eigen-axis orthogonal to one another to increase or decrease the total retardance rapidly. The retarder system is incorporated in a polarization control system and in a fiber-optic link.

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